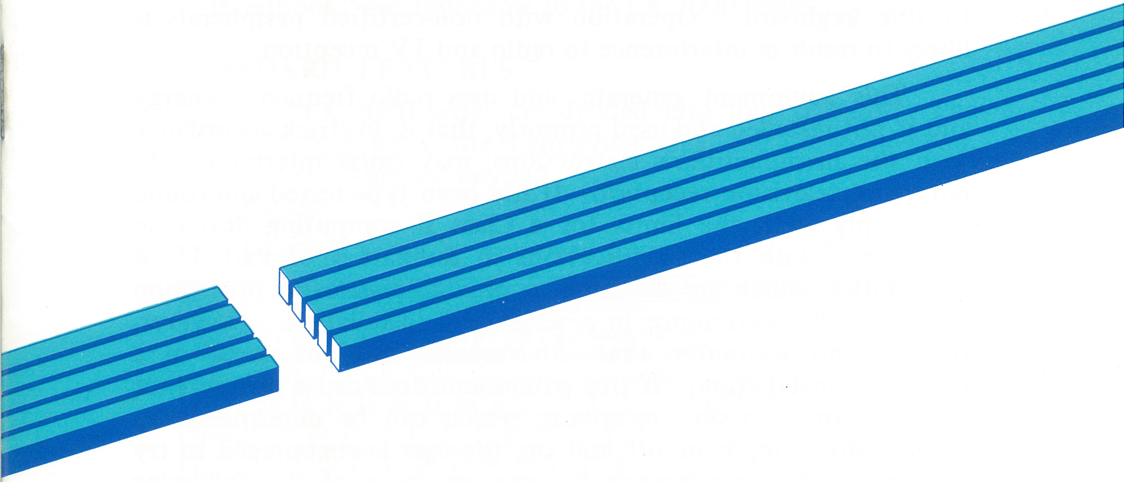
FK-2001
FK-2002



OPERATOR'S MANUAL

FOR IBM® PC/XT™ / AT® , PS /2™ COMPATIBLE
& SWITCHABLE

IBM® is a registered trademark of the International Business Machines Corporation.

INFORMATION TO USERS

WARNING: This equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC Rules. Only computer and peripherals (computer Input/Output devices, terminals, printers, etc.) certified to comply with the class B limits may be attached to this keyboard. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

This equipment generates and uses radio frequency energy and if not installed and used proporly, that is, in strick accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient the receiving antenna
2. Relocate the computer with respect to the receiver
3. Move the computer away from the receiver
4. Plug the computer into a different outlet so that computer and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the FCC helpful:

"How to Indentify and Resolve Radio-TV Interference Problems"

This Booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402-Stock No. 004-000-00345-4.

NOTICE: In order to insure continued compliance to the FCC emission limits for this keyboard, it is necessary to use computer and I/O cables which are shielded. The shield must be terminated to the metallic cabinet at both ends to guarantee adequate suppression of undesireable emissions.

1. INTRODUCTION

a. This manual is a brief description of FK-2000 series keyboards. Including FK-2001 (101 keys American version) and FK-2002 (102 keys European version)

b. The FK-2000 series are IBM® PC/XT™ / AT®, PS /2™ compatible, there are no software modifications required.

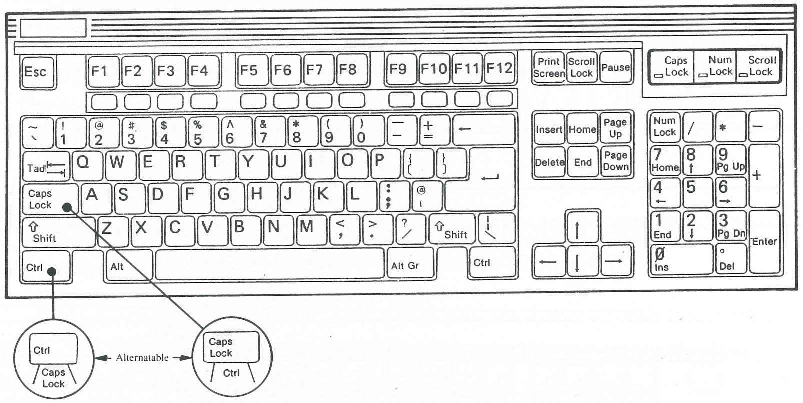
c. The instructions described in your "PC Guide to Operations Handbook" are applicable to the FK-2000 series.

2. KEYBOARD FEATURES

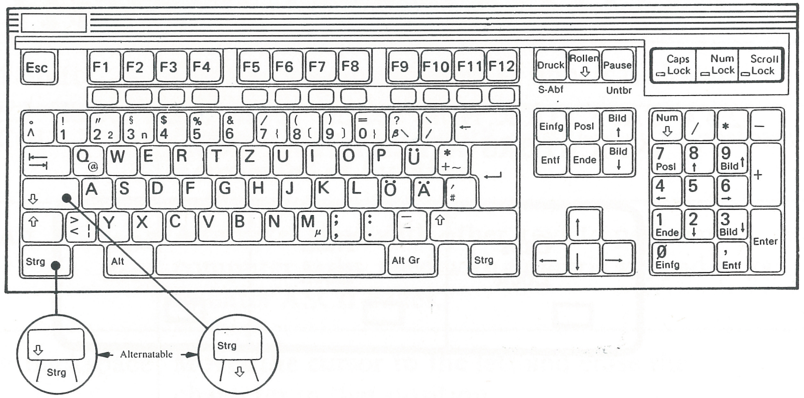
2.1 The FK-2000 series are divided into four sections: The Function keys, the Typewriter area, the Cursor keypad, and the Numeric keypad.

2.2 Layout

FK-2001 American Version MS-DOS 3.2



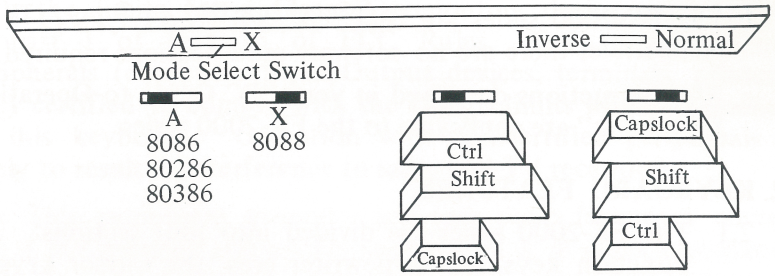
FK-2002(GR) German Version PC-DOS 3.3



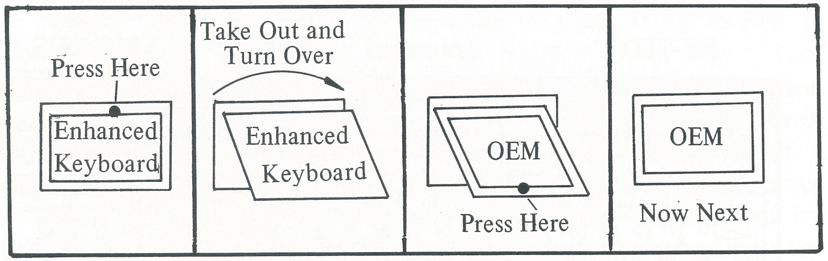
IBM® is a registered trademark of the International Business Machines Corporation.

2.3 SPECIAL DESIGN / SWITCH SELECTION

2.3.1 The Capslock key and left Ctrl key can be switched for habitual/convenient operation.

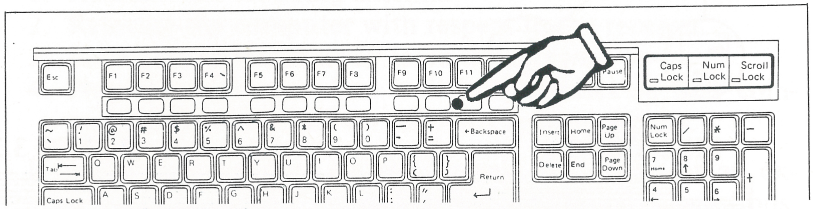


2.3.2 LOGO CHANGE

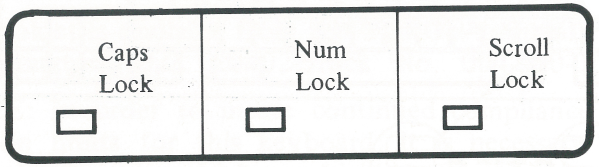


2.3.3 HELPFUL FUNCTION KEYS DESCRIPTION STRIP

Push here to take out the strip.



2.3.4 CAPS LOCK, NUM LOCK & SCROLL LOCK LED INDICATORS APPLICATION NOTE:



* The NUM LOCK and CAPS LOCK status (of the PC) are maintained in the system RAM. It is possible for an application program to overwrite or otherwise alter the contents of this RAM location. If this should happen, the keyboard CAPS LOCK or NUM LOCK or SCROLL LOCK indicators would be out of synch, with the actual status of the PC.

2.4 KEY DESCRIPTION

2.4.1 FUNCTION KEYS

F1 – F10	Application software defined function keys, please refer to respective Manual.
F11	For RT only, user define key. Scan code is HEX (57) for 8088 and HEX (78) for 8086/80286/80386.
F12	For RT only, user define key. Scan code is HEX (58) for 8088 and HEX (07) for 8086/80286/80386.

2.4.2 TYPEWRITER AREA

ESC	Escape, Defined in operation system or application software.
TAB	Performs a tab function similar to a typewriter.
Capslock	This is a toggle key; Pressing the key will cause letters to be in uppercase (capitals). Pressing the key again will return the letters to lowercase.
↑ Shift	Changes lowercase letters to uppercase letters.
Ctrl	Control, always used with another key to perform a command or function.
Alt	Alternate, Used with other keys to perform computer tasks, used with numeric keypad keys to enter ASCII codes.
← Backspace	Moves the cursor to the left and erase the character in that position.

2.4.3 CURSOR KEYPAD

Print Screen	Print Screen: When use the Prt Sc key, it will print all data on the screen. Ctrl-Prt Sc will echo everything that will display on the screen to the print until another Cerl-Prt Sc in pressed.
Sys Req	System Request: its functions defined in operating system or application program manual.
Scroll Lock	The **Scroll Lock** key has no MS-DOS function. In some applications, once you've pressed the cursor up or down keys, the **Scroll Lock** causes the cursor to be locked to the line it is on.
PAUSE	Will generate the sequential code same as press both "Ctrl + Num" key.
Insert (Ins)	Insert: sets the keyboard to the insert mode. Typed characters will be entered at the cursor's position, and all data will move to the right. Press Insert key again to leave insert mode.
Delete (Del)	Delete: deletes the character at the cursor's position.
Home	Home: moves the cursor to the first character of the top left corner of the screen.
End	End: moves the cursor to the right of the last character on the line.
Page up **PgUp** **Page down** **PgDn**	Defined in operating system or application program manual.
↑	Cursor up: moves the cursor up one line each keystroke.

↓	Cursor down: moves the cursor down one line for each keystroke.
←	Cursor left: moves the cursor one character to the left each keystroke.
→	Cursor right: moves the cursor one character to the right each keystroke.

2.4.4 NUMERIC KEYPAD

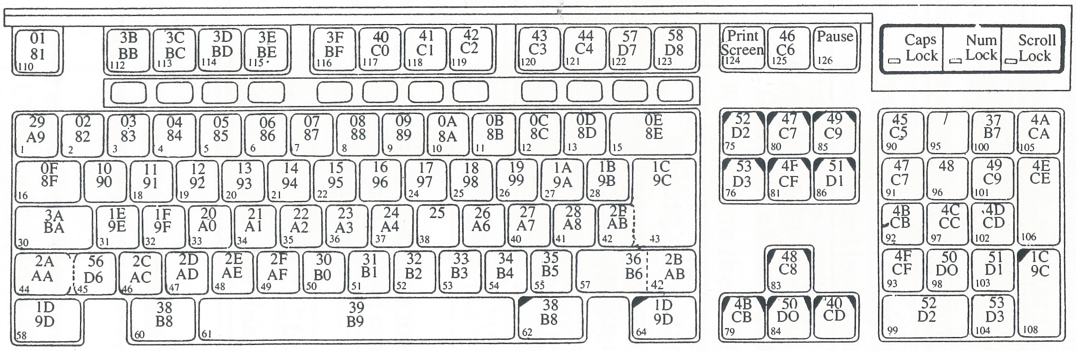
Num Lock	The NUM LOCK has a LED indicator added to show when it is activated, and the keys of 0 through 9 will be operative.
+	Plus: it will display a plus when pressed.
–	Minus: it will display a minus when pressed.
*	Star: it will display a "*" when pressed.
/	Slash: it will display a "/" when pressed.
. **Del**	Decimal Point: used with the numerical keypad.
Cursor Control Keys	Refer to "Cursor Keypad"

2.4.5 KEYS COMBINATION

Ctrl + Home = Clear Screen
Removes all information on the screen and moves the cursor to the upper left corner.

Ctrl + Alt + Del = System Reset
Holding the Ctrl and the Alt keys, then pressing the Del key, reloads your system or program diskette. (An error will appear if you have a data diskette loaded.)

SCAN CODES X MODE



XX YY PRECEDED BY EO

XX YY NORMAL CASE: PRECEDED BY EO
SHIFT CASE : MAKE CODE → EO "Shift Break Code" EO "MAKE CODE"
BREAK CODE → EO "Break Cod" EO "Shift MAKE CODE"

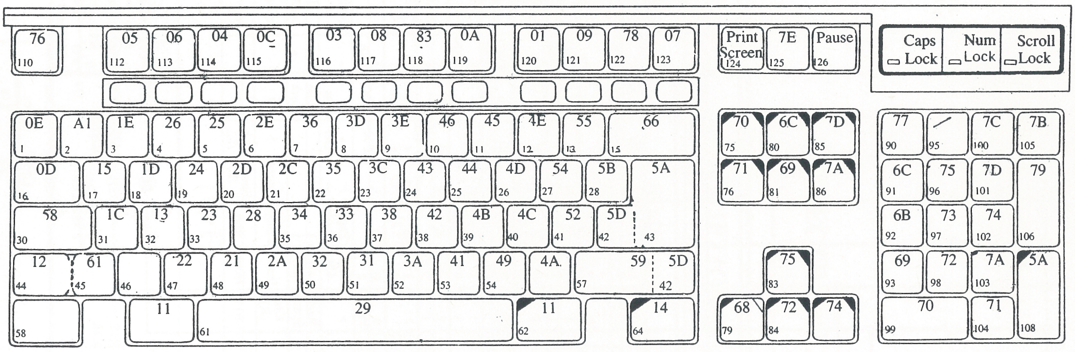
NUMLOCK ON CASE: MAKE CODE → EO2AEO "MAKE CODE" EOAA
BREAK CODE → EO2AEO "MAKE CODE" EOAA

"Print Screen"
NORMAL CASE: MAKE CODE → EO2AEO37EOAA
BREAK CODE → EOB7
Ctrl , Shift CASE: MAKE CODE → EOB7
BREAK CODE → EOB7
Alt CASE : MAKE CODE → 54
BREAK CODE → D4

"Pause"
NORMAL CASE: E11D45E19DC5
Ctrl CASE : E046EOC6
Without repeat Code and Break Code

"/"
NORMAL CASE MAKE CODE → EO35
BREAK CODE → EOB5
Shift CASE : MAKE CODE → EOAAEO35
BREAK CODE → EOB5EO2A

SCAN CODES A MODE



XX YY PRECEDED BY EO

XX YY NORMAL CASE: PRECEDED BY EO
SHIFT CASE : MAKE CODE → EO "Shift Break Code" EO "MAKE CODE"
BREAK CODE → EO "Break Cod" EO "Shift MAKE CODE"

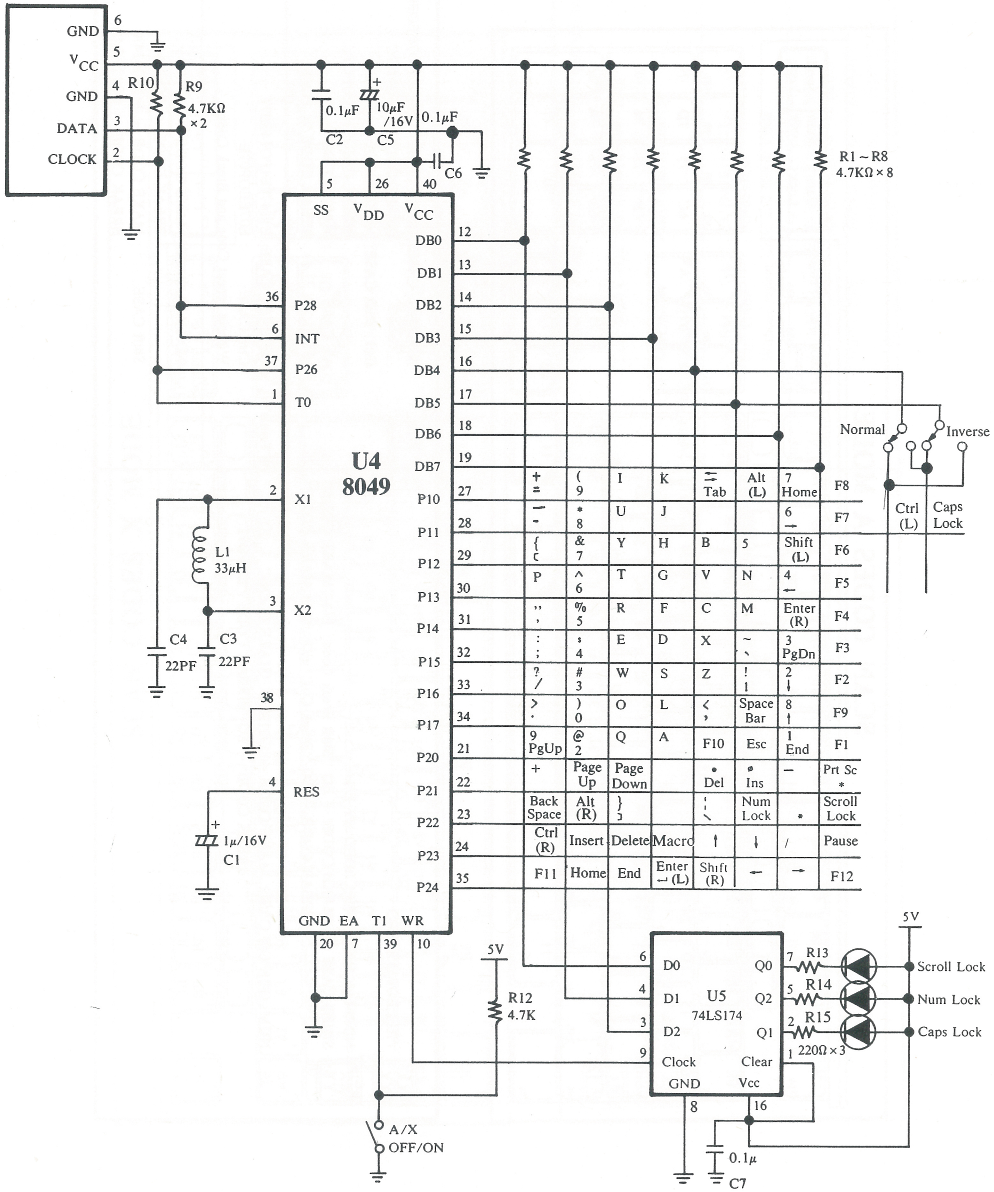
NUMLOCK ON CASE:: MAKE CODE → EO12EO "MAKE CODE"
BREAK CODE → EO "BREAK CODE" EOFO12

"Print Screen"
NORMAL CASE: MAKE CODE → EO12EO7CEOFO12
BREAK CODE → EOFO7C
Ctrl , Shift CASE: MAKE CODE → EO7C
BREAK CODE → EOFO7C
Alt CASE : MAKE CODE → 84
BREAK CODE → FO84

"Pause"
NORMAL CASE: E11477E1FO14F077
Ctrl CASE : E07EEOF07E
Without repeat Code and Break Code

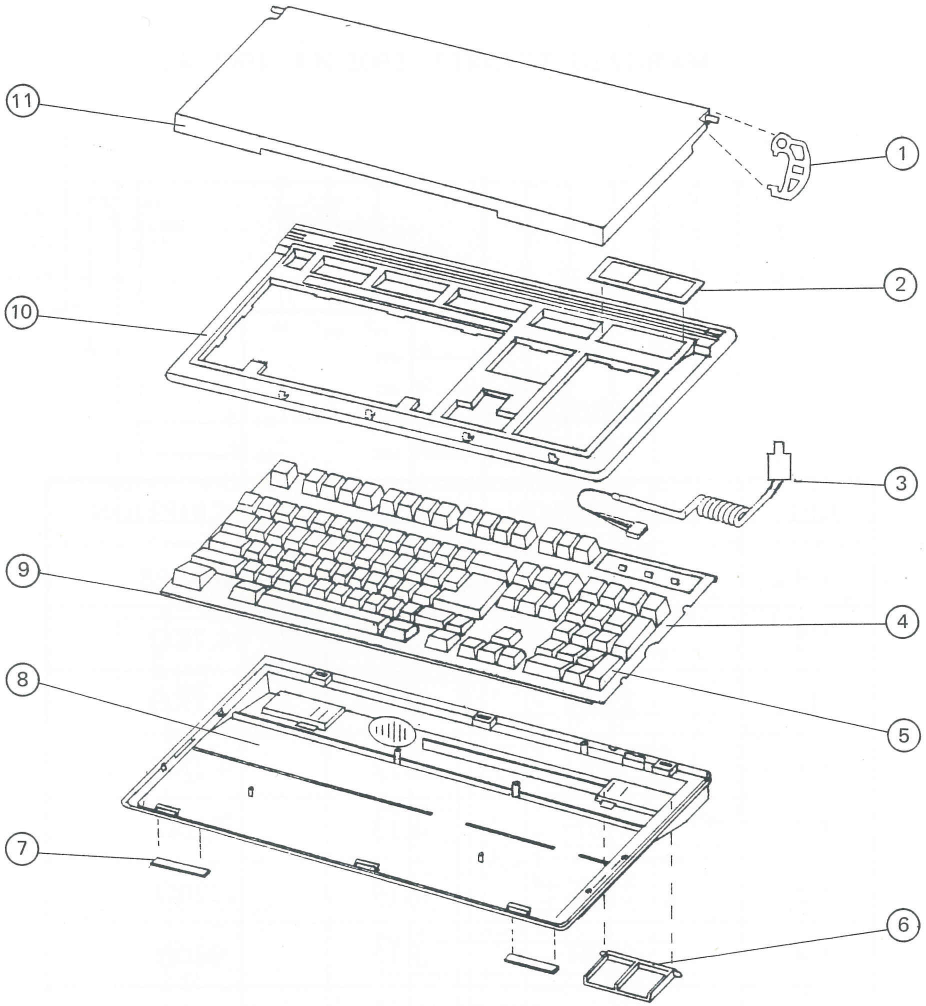
"/"
NORMAL CASE MAKE CODE → EO4A
BREAK CODE → EOFO4A
Shift CASE : MAKE CODE → EOFO124A
BREAK CODE → EO12FO4A

FK-2001 FK-2002 CIRCUIT DIAGRAM



ELECTRICAL PARTS LIST

REF	DESCRIPTION	REF	DESCRIPTION
U4	8049	R1~R8	4.7KΩ x 8
U5	74LS174	R9	4.7KΩ
L	33μH	R10	4.7KΩ
C1	1μF	R12	4.7KΩ
C2	0.1μF	R13	220Ω
C3	22PF	R14	220Ω
C4	22PF	R15	220Ω
C5	10μF	LED 1	5 x 7 (mm)
C6	0.1μF	LED 2	5 x 7 (mm)
C7	0.1μF	LED 3	5 x 7 (mm)



REF	DESCRIPTION	REF	DESCRIPTION
1	Cover Fixer	7	Rubber
2	Led Label	8	Lower Case
3	Cable Assembly	9	PCB-Module
4	Key Frame	10	Upper Case
5	Key Cap	11	Dust Cover
6	Foot		

MECHANICAL & ELECTRICAL SPECIFICATION

1. Mechanical Specifications:

1-1 Our Shape & Appearance: See each schematic drawing attached

1-2 Key Travel: 3.5 ± 0.5mm

1-3 Type of Performance: Non-Lock Release Type

1-4 Operating Force: 70 ± 25 gram

1-5 Key Touch-Feeling: There shall be no troubles (such as squeaking, catching locking) in the key movement when pushing gently the top surface of keytop with a speed of three times/Sec.

1-6 Key Thrust Pressure Strength: There shall be no damage or breakage to the keyboard when subjected to a 1-minute duration of 1ON (1.02kgf) depression pressure applied onto a key in its moving direction.

2. Key Switch Electrical Specifications:

2.1 Contact Resistance: < 200 mΩ (typical 25 mΩ)

2-2 Insulation Reistance: 50 MΩ, or more when measured with an insulation resistance tester of DC 100V

2-3 Dielectric Withstanding Voltage: There shall be no harmful effects when subjected to 1-minute duration of A.C. 100V applied.

2-4 Contact Bounce: 5m. Sec. or less

2-5 Operating Point: 2.4 ± 0.5mm (0.09" ± 0.02")

2-6 Operating Life: After 20-million operations under the resistance load of DC 5V 5mA applied, the switch must satify such conditions as follows:

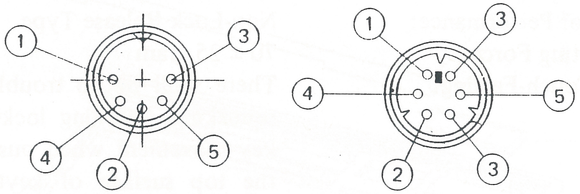
2-7 Environmental Test Condition: Environmental testing, unless otherwise specified, must be conducted under the following conditions:
Temperature: 20°C ± 2°C
Humidity: 65% ± 5%

2-8 Operating Temperature –20 ~ +60°C

2-9 Storage Temperature: –30 ~ +70°C

CONNECTOR

The keyboard cable connects to the system board through a 5 pin DIN plug or 6 pin MINI DIN plug. The following figure lists the connector pins and their signals:



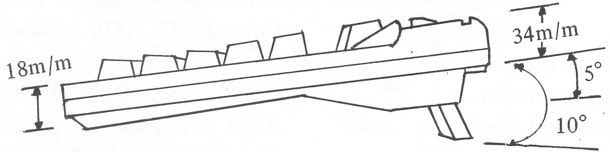
Assignment

Pin No.	Signal Name	Pin No.	Signal Name
1	Clock	4	Gnd
2	Data	5	+5V
3	Spare		

Power Source

Voltage	Current
+5V ±5%	500mA (max)

KEYBOARD ADJUSTMENT



Step sculptured keytop

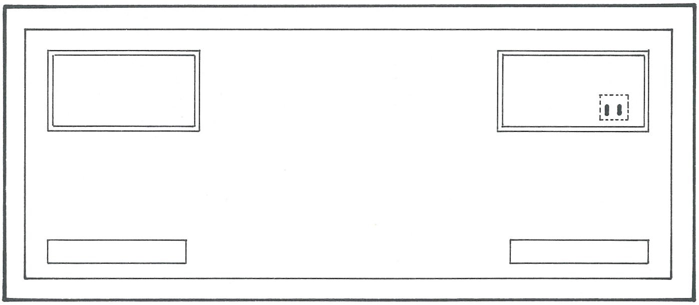
The keyboard adopt angle rack to increase it's height. It can be adjusted from 5 to 10 degrees relative to the desk top while pull open the angle rack.

≪ONE YEAR WARRANTY≫

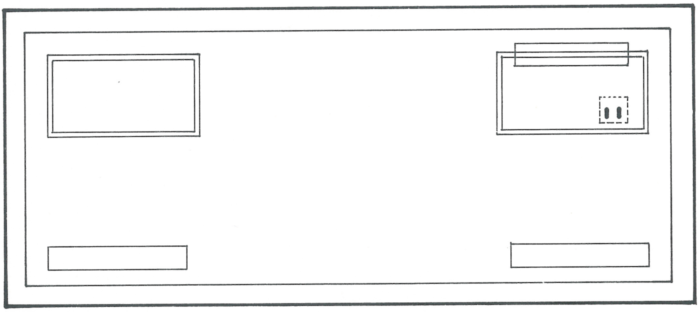
We shall offer service for our products one year from date of delivery. Also we will be glad to supply parts for replace by yourself if necessary.

DIP SWITCH FUNCTION DESCRIPTION

1. LOCATION: DIP SWITCH IS INSIDE THE RIGHT FOOT STAND.



2. USAGE: TURN ON THE FOOT STAND.
USE SCREW DRIVER TO ADJUST THE RIGHT FUNCTION.



3. TO ADJUST THE DIP SWITCH ACCORDING TO TYPE OF MAIN BOARD.

FK-1001 or FK-1002
FK-2001 or FK-2002

M/B TYPE \ PIN NO	1	2
PC/XT	ON	ON
Enhanced XT	ON	OFF
PC/AT	OFF	ON
Enhanced AT, PS/2	OFF	OFF

FK-3001 or FK-3002

M/B TYPE \ PIN NO	1	2
PC/XT	ON	ON
Enhanced XT	OFF	ON
PC/AT	ON	OFF
Enhanced AT, PS/2	OFF	OFF